



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/928,437	08/14/2001	Franklin D. Lomax JR.	211473US23	8138
22850	7590	11/19/2003	EXAMINER	
OBLON, SPIVAK, MCCLELLAND, MAIER & NEUSTADT, P.C. 1940 DUKE STREET ALEXANDRIA, VA 22314			LEO, LEONARD R	
			ART UNIT	PAPER NUMBER
			3753	
			DATE MAILED: 11/19/2003	

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/928,437

Applicant(s)

LOMAX ET AL.

Examiner

Leonard R. Leo

Art Unit

3753

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 23 December 2002.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-11 and 13-18 is/are pending in the application.
- 4a) Of the above claim(s) 17 and 18 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-11 and 13-16 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All   b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.  
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)                      4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)                      5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_                      6) ☐ Other: \_\_\_\_\_

Art Unit: 3753

### **DETAILED ACTION**

The amendment filed December 23, 2002 has been entered. Claim 12 is cancelled, claims 1-11 and 13-18 are pending, and claims 17-18 remain withdrawn.

#### ***Drawings***

The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the “safety burst disk within said housing” and “at least one steam reformation catalyst and at least one water gas shift reaction catalyst” in claim 1 must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

#### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 1-11 and 13-16 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Art Unit: 3753

The specification lacks an adequate written description of the invention. There is no support for both "at least one steam reformation catalyst *and* at least one water gas shift reaction catalyst" on the inside of the tubes as recited in claim 1.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 8 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 8 recites the limitation "the means for holding said tubes" in line 1. There is insufficient antecedent basis for this limitation in the claim.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-2, 8-11, 13 and 15-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cizmer et al in view of Barratt et al.

Cizmer et al (column 1, lines 13-56) discloses all the claimed limitations except a safety burst disk.

Barratt et al discloses a tube and shell heat exchanger comprising a tube bundle 54 disposed within housing 12; baffles 42; and a safety burst disk 52 for the purpose of protecting against pressure overload.

Art Unit: 3753

Since Cizmer et al and Barratt et al are both from the same field of endeavor and/or analogous art, the purpose disclosed by Barratt et al would have been recognized in the pertinent art of Cizmer et al.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to employ in Cizmer et al a safety burst disk 52 for the purpose of protecting against pressure overload as recognized by Barratt et al.

Although Cizmer et al discloses catalyst tubes, the specific catalyst within the tubes is considered to be an obvious design choice, producing no new and/or unexpected results and solving no stated problem. As disclosed in applicants' specification, the particular catalyst is merely a preference.

Regarding claims 2 and 8, Cizmer et al discloses a plurality of baffles, which are inherently perpendicular and have holes to receive the tube bundle.

Regarding claims 15-16, the presence of method limitations in an apparatus claim are given no patentable weight in this instance. It has been held that a recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus satisfying the claimed structural limitations. *Ex parte Masham*, 2 USPQ2d 1647 (1987). Arguendo, the device of the combination of Cizmer et al and Barratt et al meets the claim limitations.

Claims 3-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cizmer et al in view of Barratt et al as applied to claims 1-2, 8-11, 13 and 15-16 above, and further in view of Gebhardt.

The combined teachings of Cizmer et al and Barratt et al lacks a polygonal shaped baffle.

Art Unit: 3753

Gebhardt discloses a tube and shell heat exchanger comprising a plurality of tubes 12-15 disposed within housing 1; and polygonal shaped baffles 19, 26 for the purpose of ease of manufacture and assembly.

Since Cizmer et al and Gebhardt are both from the same field of endeavor and/or analogous art, the purpose disclosed by Gebhardt would have been recognized in the pertinent art of Cizmer et al.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to employ in Cizmer et al polygonal shaped baffles for the purpose of ease of manufacture and assembly as recognized by Gebhardt. Forming a polygonal shaped baffle is simpler than forming a circular baffle with precision. Furthermore, the shape of the baffle is nothing more than a mere change in shape producing no new and/or unexpected results and solving no stated problem.

Regarding claim 6, the baffles 19, 26 of Gebhardt are disposed in sealing grooves 24, 29.

Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Cizmer et al in view of Barratt et al, and further in view of C as applied to claims 3-6 above, and further in view of Uggerby.

The combined teachings of Cizmer et al, Barratt et al and C lacks a resilient seal.

Uggerby discloses a tube and shell heat exchanger comprising a plurality of tubes 9 disposed within housing 8, and a plurality of baffles 24 with resilient seal 25 for the purpose of supporting the baffle within the housing and minimizing fluid bypass.

Art Unit: 3753

Since Cizmer et al and Uggerby are both from the same field of endeavor and/or analogous art, the purpose disclosed by Uggerby would have been recognized in the pertinent art of Cizmer et al.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to employ in Cizmer et al a resilient seal for the purpose of supporting the baffle within the housing and minimizing fluid bypass as recognized by Uggerby.

Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Cizmer et al in view of Barratt et al as applied to claims 1-2, 8-11, 13 and 15-16 above, and further in view of Melnyk et al.

The combined teachings of Cizmer et al and Barratt et al lacks a parting plane.

Melnyk et al discloses a tube and shell heat exchanger comprising a plurality of tubes 28 disposed within housing 12; baffles 26; wherein the housing is composed of two halves 14 for the purpose of ease of manufacture and assembly.

Since Cizmer et al and Melnyk et al are both from the same field of endeavor and/or analogous art, the purpose disclosed by Melnyk et al would have been recognized in the pertinent art of Cizmer et al.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to employ in Cizmer et al the housing is composed of two halves 14 for the purpose of ease of manufacture and assembly as recognized by Melnyk et al.

Art Unit: 3753

***Response to Arguments***

Although claims 17-18 have been amended to depend from claim 1, the claims remain withdrawn from further consideration. An election with traverse was made on July 19, 2002.

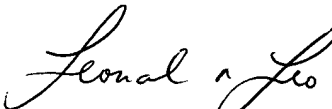
The rejection in view of Courchesne is withdrawn.

No further comments are deemed necessary at this time.

***Conclusion***

Any inquiry of a general nature, relating to the status of this application or clerical nature (i.e. missing or incomplete references, missing or incomplete Office actions or forms) should be directed to the Technology Center 3700 Customer Service whose telephone number is (703) 306-5648. Status of the application may also be obtained from the Internet: <http://pair.uspto.gov/cgi-bin/final/home.pl>

Any inquiry concerning this Office action should be directed to Leonard R. Leo whose telephone number is (703) 308-2611.

  
LEONARD R. LEO  
PRIMARY EXAMINER  
ART UNIT 3753

November 16, 2003